WHAT IS CLAIMED IS:

1. An improved dynamic bandwidth allocation method in a reservation network comprising one
   or more users and at least one headend, wherein one or more of said users request respective
   allocations of bandwidth based on a state parameter of said requesting user, said headend
   dynamically allocating bandwidth to one or more of said users in response to said respective
   requests, said headend responding to each of said requesting users with said allocated
   bandwidth, said response being delayed for a period of time which is a function of a
   reservation latency δ of said reservation system, said improvement comprising the step of
   scaling said state-based request by a factor of $1/\delta$.

2. The method of claim 1 wherein said state based request equals the size of a queue q_i of a user
   i and wherein said request for bandwidth by user i at time t equals q_i^t/δ.

3. The method of claim 1 wherein said reservation network includes memory available to a user i
   sufficient to store historical information about said state parameter of user i, the improvement
   further comprising the step of each user requesting at a time instant t an amount of bandwidth
   equal to the greater value as between the number of arrivals of cells at said user's queue, q_i, at
   said time instant t, (λ_i^t) and q_i^t/δ.